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PLANT IMMIGRANTS

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U.S. DEPT. OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
C. L. BREWER, CHIEF

Descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to such newly introduced plants as have arrived during the month at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture. These descriptions are revised and published later in the Inventory of Plants Imported.

No. 99.

July 1914.

Genera Represented in This Number.

Allium	38787	Ligustrum	38807
Beta	38883	Mangifera	38981
Brassica	38782-783	Panax	38742-751
Capsicum	38788	Plagianthus	38969
Coix	38868-880	Prunus	38761
Cucurbita	38884		38778
Daucus	38786		38856
Dendrocalamus	38736		38978
Escallonia	38759	Syringa	38828-830
Gleditsia	38800-802	Thuja	38797
Hordeum	38885-887	Toona	38805
Lespedeza	38808-09	Vitis	38853

PLATES: Green Fruited Rubus from Brazil.

The Manga da Rosa or Rose Mango.

A Scene on the Banks of the Rio Sao Francisco.

The Imbu tree (*Spondias tuberosa*) at home.

(NOTE: Applications for material listed in these multigraphed sheets may be made at any time to this Office. As they are received they are filed, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders or others interested.)

Matter in these multigraphed sheets must not be published without special permission.

Allium schoenoprasum. (Liliaceae.) 38787. Seeds of chives from Sianfu, Shensi, China. "A superior variety of chives, much used, forced in darkness, as a winter vegetable. Eaten with fried meats and as a savory in soups; considered to be very healthful. Might possibly be a profitable crop in America when supplied to the Hebrew and Chinese colonies in eastern American cities. Chinese name 'Tcho tsai'." (Meyer's introduction.)

Beta vulgaris. (Chenopodiaceae.) 38883. Seeds of beet from Esperanza, Sonora, Mexico. Presented by Mr. W. W. Mackie, Director, Yaqui Valley Experiment Station. "Gathered in Merv, Transcaspia, Turkestan, in 1911. These seeds came from selections out of three years of crops during which time, I have had them under observation. The climate for the first part of the year in the Yaqui Valley is very similar to the summer of Turkestan where I obtained these seeds. The beets produced from these seeds are very vigorous, hardy and drought resistant. The leaves are large and tender and are much used for greens in Turkestan. The flesh is tender, sweet and light red color. The root grows to an immense size, and is eaten greedily by stock. For three seasons this beet has regularly produced an abundance of plump seeds of high viability in June from seeds planted in the preceding fall. This seeding of beets the first year from seed sometimes occurs at intervals in individuals when subjected to drought and again irrigated, thus starting a new or second growth but this Turkestan beet produces seed from every beet regularly in June." (Mackie.)

Brassica pekinensis. (Brassicaceae.) 38782-783. Seeds of Chinese cabbage or pai-tsai, from Shantung, China. Two varieties, one "a remarkably fine one, of very white color and possessing a mild, sweet flavor, weighing up to 10 pounds apiece," the other "of conical shape, leaves greenish-white, very soft and tasteful when boiled or stewed. Chinese name 'Ta pai tsai', meaning 'large white vegetable'." (Meyer's introductions.)

Capsicum annuum. (Solanaceae.) 38788. Seeds of red pepper from Feitcheng, Shantung, China. "A very elongated variety of Chili pepper, locally much dried and kept for winter use. Is used as a condiment in soups and with noodles, when ground up and mixed with sesame oil and a little salt, creating a good appetite in that way. Chinese name 'Chang lo chiao,' meaning 'long chili pepper'." (Meyer's introduction.)

Coix spp. (Poaceae.) 38868-880. Seed of thirteen varieties of Job's-tears from Burma. Presented by Mr.

H. G. Carter, Economic Botanist to the Botanical Survey of India. Among these are the principal varieties used by the Burmese natives as food grains, for the manufacture of flour, and parched. Introduced for the work of the Office of Forage Crop Investigations.

Cucurbita pepo. (Cucurbitaceae.) 38884. Pumpkin seeds from Esperanza, Sonora, Mexico. Presented by Mr. W. W. Mackie, Director Yaqui Valley Experiment Station. "Gathered in Merv, Transcaspia, in 1911. These seeds came from selections out of three years of crops during which time I have had them under observation. When planted in March immense crops were produced in June. With the beginning of the rainy season in July another crop is planted producing fine crops in December. The soil is a dark red clay. Other pumpkins do not produce such good crops nor do they so well withstand the heat and drought. The rind is hard and greenish in color. It is a good keeper lasting for months in this warm climate." (Mackie.)

Daucus carota. (Apiaceae.) 38786. Seeds of carrot from Sianfu, Shensi, China. "A long blood-red carrot of special value for pickling purpose on account of its attractive color. Thrives best on deep, rich, sandy soils which retain moisture well. Chinese name 'Hong tiao lo ba,' meaning 'red stick root.'" (Meyer's introduction.)

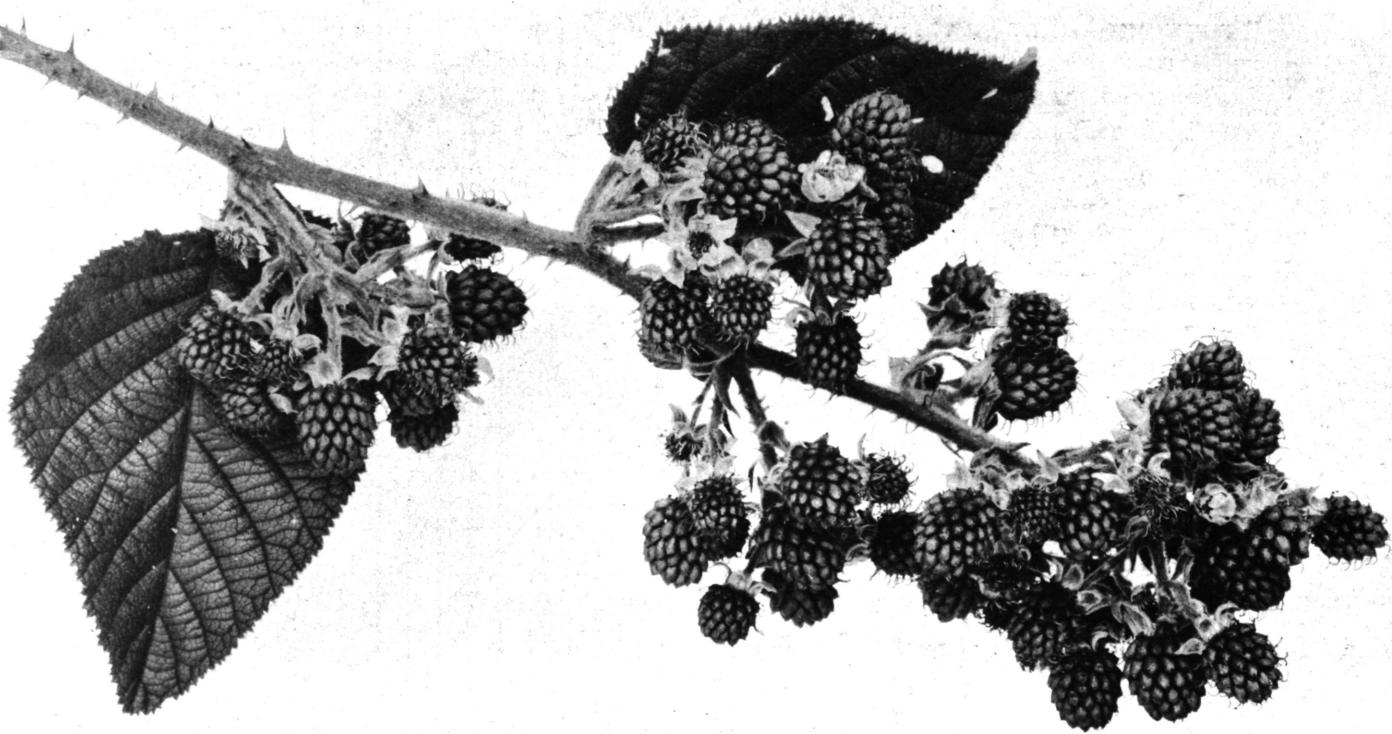
Dendrocalamus hamiltonii. (Poaceae.) 38736. Seeds of a bamboo from Darjeeling, India. Collected by Mr. L. J. Mackintosh at the request of Mr. J. F. Rock, collaborator of this Office. "A common bamboo in the eastern Himalaya from Kumaon to Assam. It is generally a tall grass 40 to 60 feet in height, but sometimes found as a long and tangled bush. The young shoots are used as food, being boiled and eaten in Sikkim, Bhutan, and Assam. The halms are large, 3 to 6 inches in diameter, rather hollow and not always straight, but they are used for every variety of purpose. The bamboo grows gregariously on hillsides up to 3000 feet. This bamboo is used by some tea planters for shading their estates from the hot and violent winds. This bamboo flowers every year which is not the case with all others of this genus." (Watt, Dictionary of Economic Products of India.)

Escallonia pterocladi. (Saxifragaceae.) 38759. Seeds from the Royal Botanic Garden, Kew, England. Presented by the Director. "A small, decidedly hardy, much branched shrub native of western Patagonia, four or five feet high with spreading branches. It is a bushy plant with leaves like a small-leaved myrtle, and abundant very pretty Epacris-like, fragrant flowers tinged with red. The old wood

is clothed with loose, cracked papyraceous bark and the branches are straight, rigid, singularly angled and winged with vertical alae, which are sinuate and downy or fringed at the edge." (Curtis's Botanical Magazine, no. 4827.)

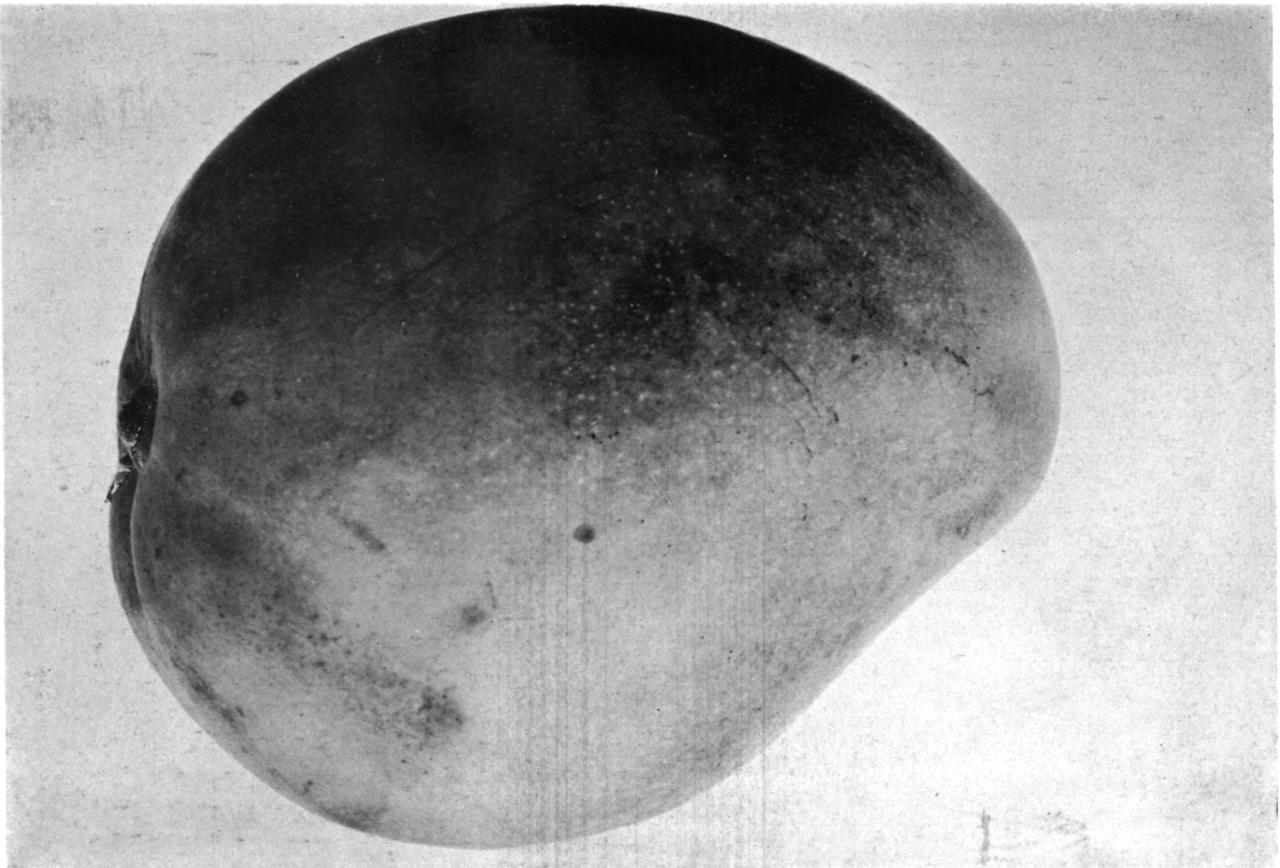
Gleditsia sinensis. (Caesalpiniaceae.) 38800-802. Seeds of three varieties of Chinese soap-bean. "These Chinese Gleditsias often grow to a very large size, becoming quite old and at times making beautiful, well rounded heads of dense branches and foliage. The conspicuous pods persist on the trees all through the winter. They are marvelously drought resistant and do not object to a certain amount of alkali. Recommended as an ornamental park and shade tree for the mild-wintered, semi-arid sections of the United States. The Chinese find use for the pods, when sliced up, as a substitute for soap for washing their hair and certain fabrics. Chinese name 'Tsao chio.' The young trees often have their trunks covered with big spines which often have totally disappeared when the trees are old." (Meyer's introductions.)

Hordeum sp. (Poaceae.) 38885. Seed of barley from Esperanza, Sonora, Mexico. Presented by Mr. W. W. Mackie, Director Yaqui Valley Experiment Station. "White Turkestan barley gathered in Merv, Transcasplia, in 1911. These seeds came from selections out of three years of crops during which time I have had them under observation. The Wahl-Henius Institute of Fermentology, to which a quantity of the seed was sent report as follows: 'The barley itself is of the 6-rowed *nutans* type and has a marked flesh-colored aleurone layer, such as is characteristic of barleys of Asiatic origin, in fact, the flesh colored appearance is more pronounced than we have ever noticed in any similar barley before. This barley really is strange to us. It is irregular in size and form, and has a very low albumen content' (due no doubt to the skinning off of the germ or embryo by too close threshing). 'The taste and flavor are remarkably agreeable. If any of this barley is malted, we should be pleased to receive a five-pound sample of the malt. If this barley could possibly be grown on a rich nitrogenous soil, so that the albumen content could be increased to about 13%, it, in our opinion, would be by far the best barley for malting purposes among the ten samples you sent.' Our field tests show this barley to be very vigorous and hardy with splendid germination. In height it is about 20 to 30% shorter than the common California 6-rowed barley but produces thicker and longer heads. It is nearly three weeks earlier in maturing, in other words it is a quick growing variety. On account of its propensity to rust I would advise that it be planted inland away from the influence of the sea coast and fogs."



A GREEN FRUITED RUBUS FROM BRAZIL.

This species, *Rubus brasiliensis* Mart., occurs in the Highlands of Minas Geraes, where it was collected in 1914 by the Dorsett, Shamel and Popenoe Expedition. The plant grows to a height of six or more feet, and produces its fruits in clusters of good size. It is called by the natives, amora, a name which properly belongs to the mulberry but is also applied to *Rubus rosaefolius* as well as the species here shown. The fruits are translucent yellowish-green when ripe; sweet and agreeable in flavor but rather seedy. For breeders of rubiaceous fruits this species may be of interest and value. Brazilian Expedition Photo No. D 1579, taken at Sitio, Brazil, Jan. 28, 1914.



THE MANGA DA ROSA, OR ROSE MANGO.
(Natural size.)

This unusually beautiful mango, supposed originally to have come from Mauritius, is cultivated on a commercial scale at Pernambuco, and to a less extent in Bahia and other coastal towns of Brazil. It is somewhat fibrous, and perhaps not equal in flavor to some of the Indian mangos now growing in Florida, but its attractive appearance, excellent keeping and shipping qualities have won for it great popularity. In color it is deep apricot, overlain with varying shades of salmon and flame scarlet around the basal end. The flesh is deep yellow in color, juicy, and of a very agreeable flavor. Large quantities are shipped from Pernambuco to Rio de Janeiro and sold there at 65 to 80 cents each. It is one of the few varieties in Brazil which are propagated by inarching. Brazilian Expedition Photograph No. D 1210, taken at Rio, January 2, 1914.

It appears to be entirely suited to the arid irrigated regions of the Southwest. All our grains are grown entirely without rain by the aid of irrigation even to sprouting the seed. White Turkestan yields far better than any other variety tested." (Mackie.)

Lespedeza spp. (Fabaceae.) 38808-809. Seeds from Ta Hua shan, Shensi, China. Two shrubby Lespedezas, "found on rocky mountain sides at elevations from 3000 to 4000 feet above sea level. Of possible value for forage purposes and as a cover shrub on sandy wastes." (Meyer's introductions.)

Ligustrum quihoui. (Oleaceae.) 38807. Seeds of a privet from the mountains near Nan to tchu, Shensi, China. "A privet found in rocky banks and in between pebbles and rocks, growing into a small or medium-sized bush. Bears masses of small black berries, that set off well with the small evergreen foliage. Is much utilized by the Chinese to graft *Olea fragrans* upon. Of value as a hedge and border shrub, especially for the mild-wintered, semi-arid parts of the United States. Chinese name 'Tung ching,' meaning 'Wintergreen.'" (Meyer's introduction.)

Mangifera indica. (Anacardiaceae.) 38981. Cuttings of a mango from Santiago de las Vegas, Cuba. Collected by Mr. Wilson Popenoe, of this Office. "*Luisa*, a mango of the Philippine type, of which the parent tree is growing in the Casa Vivienda garden at the Central Nueva Luisa, Jovellanes, Matanzas province. Scions have been taken from the original tree and propagated by Mr. A. H. Van Hermann of this place from whom these cuttings were obtained. The Philippine mangos as found here in Cuba are an entirely distinct race from the other mangos grown on the island. The type can be distinguished from the others grown here by the pale, grayish mahogany color of the young leaves, the venation of the leaves, the slender compressed fruits, terminating in a sharp point at the apex, and the thin husk which surrounds the seed. The Cecil mango of Miami, Florida, is a representative of this race and exhibits the characteristics which are noticeable here in Cuba. The race is believed originally to have come from the Philippines. While there is remarkably little variation among the seedlings of this race there are frequently noticeable differences in the size, brightness of color and flavor of the fruit. *Luisa* is described by Prof. F. S. Earle, who was, I believe, the first to observe it, as a fruit 4 to 5 inches in length, dull yellowish green in color with little fiber and remarkably good flavor. It is considered by Prof. Earle the best mango of the Philippine type which he has seen." (Popenoe.)

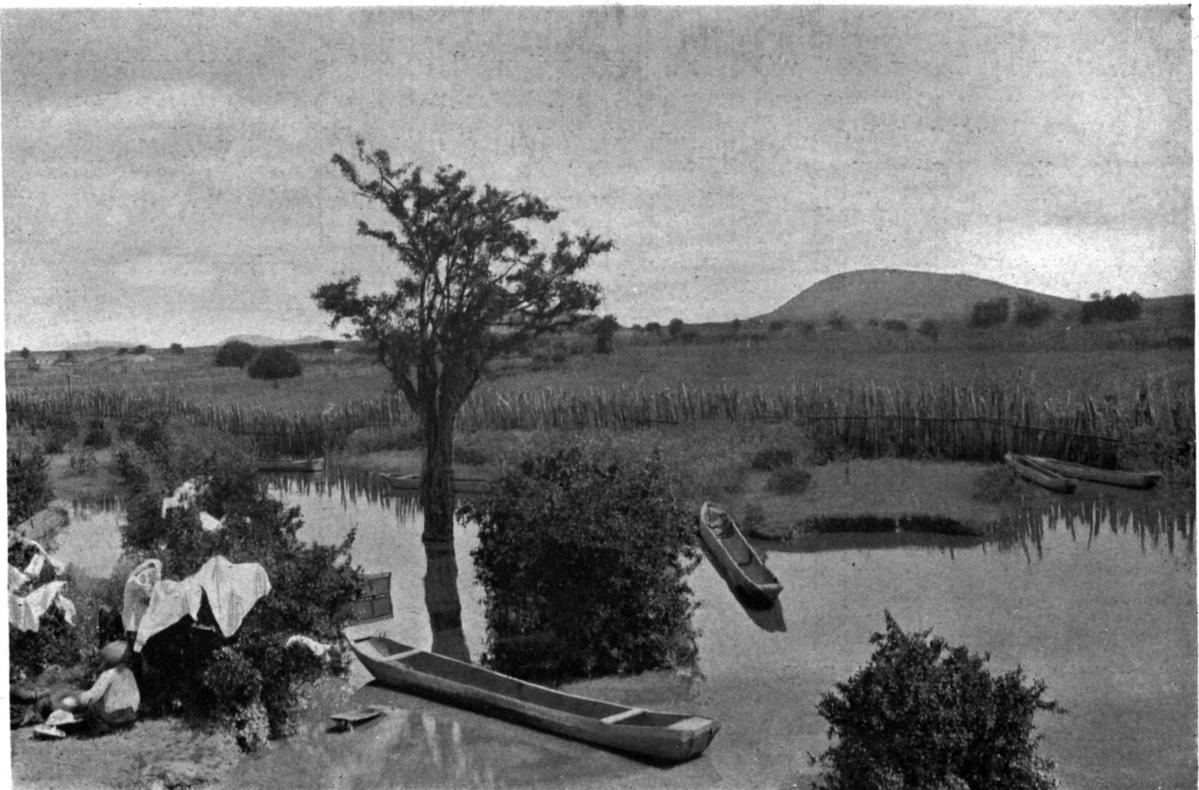
Panax quinquefolium. (Araliaceae.) 38742-751. Seeds of ten varieties of ginseng from China. Presented by His Excellency Ts'ao Ju-lin, twice Minister for Foreign Affairs, through Dr. Paul S. Reinsch, American Minister, Pekin, at the request of Mr. Frank N. Meyer. Wild and cultivated varieties from Shengking province, Manchuria.

Plagianthus betulinus. (Malvaceae.) 38969. Seeds from Epsom, Auckland, New Zealand. Presented by Mr. D. Petrie. "A tree, varying from 30 to 60 feet in height, with terminal panicles of white flowers. The young shrub forms a mass of tortuous interlacing branches." (Laing and Blackwell, Plants of New Zealand.) "This tree is from the southern part of our colony and should be hardy enough for your lowlands. The tree is dioecious and it would be interesting to note how many turn out male and how many female. The tree naturally grows on alluvial flats and by the side of streams that meander through such stations. I doubt if it would thrive anywhere else." (Petrie.)

Prunus armeniaca. (Amygdalaceae.) 38778, 38978. Seeds of an apricot from Somma Vesuviana, Italy. Presented by Dr. Gustav Eisen, Rome. "Pelese apricot. Size large, slightly ovoid. Deep crease between the cheeks, one of which is larger than the other. Skin smooth, without spots. Color, orange chrome, with carmine flush. Seed medium, with a small projection or hump. Flesh very firm, ripens evenly all around and shows no unripe side. Flavor very fine. Sweetness medium (the specimen having been picked while unripe.) Leaves pointed. I consider this apricot one of the finest if not the finest I have come across. It should be a splendid shipper, and if the sweetness is increased by allowing the fruit to ripen more, it should prove a very desirable table fruit, superior to the Royal. An average fruit displaced 53 cubic cm. water, when immersed in a graduate." (Eisen.)

Prunus sargentii. (Amygdalaceae.) 38761. Seeds from the Arnold Arboretum, Jamaica Plain, Mass. Presented by the Director, Dr. C. S. Sargent. "This species is considered by Wilson valuable as a stock for Japanese cherries." (Sargent.)

Prunus tomentosa. (Amygdalaceae.) 38856. Seeds from Pekin, China. About 125 pounds of stones of the north Chinese bush-cherry, a fruiting shrub of great promise for the cooler, semi-arid sections of the United States. Chinese name 'Suan tau'r' or 'Suan ying tau'r,' meaning 'sour cherry.'" (Meyer's introduction.)



A SCENE IN THE VALLEY OF THE RIO SAO FRANCISCO.

This photograph, which was taken near the village of Urubu, in the state of Bahia, a short distance from the river, shows the general character of this upland region, with its flat plains sparsely covered with vegetation, and occasional round topped hills. The compact shrubs in the foreground, on one of which clothes have been hung to dry, are *Annona spinescens*, a rare, spiny species whose soft, oval, brownish-orange fruits were previously unknown to science. The dugout canoe is the chief means of transportation in this region, though communication with the outside world is maintained through the small river steamers which ply between Joazeiro, in Bahia state, and Pirapora, 1300 kilometers upstream in Minas Geraes. The people are of a mixed Indian and negro blood, unprogressive, with only the hoe, the brush hook, and the facao or heavy knife to carry on their agricultural pursuits, which are limited to the cultivation of mandioca, maize, sugar cane, and a few other crops. Brazilian Expedition photograph No. D 1916. Taken February 17, 1914.



THE IMBU TREE AT HOME.

In the dry interior of northeastern Brazil the imbu (*Spondias tuberosa* Arruda) is one of the most important fruits. The tree grows wild throughout the dry lands or catingas and produces abundant crops of golden yellow fruits the size of a plum. It can nearly always be distinguished from other plants on the catinga, even at a distance, by its broad, spreading form. The specimen here shown is growing near the town of Bom Fim, in Bahia state. A native has taken advantage of the shelter from the sun's rays offered by this tree and built his hut close to the trunk. Brazilian Expedition Photo No. D 2097, taken at Bom Fim, Bahia, Feb. 27, 1914.

Syringa spp. (38828-830. Seeds of lilacs from Shensi, China. One "A tree lilac, found in great masses here and there on rocky mountain slopes, at elevations between 3000 and 5000 feet above sea level. Of value as a stock for 'standard' lilacs and for hybridization purposes." Another "A small lilac of very sturdy growth, found in rocky cliffs at elevations from 4000 to 6000 feet. Of value for the northern sections of the United States as a garden and park shrub." (Meyer's introductions.)

Thuja orientalis. (Pinaceae.) 38797. Seeds of arbor-vitae from Chao yi hsien, China. "A remarkable form of the oriental arbor-vitae, of flattened-globular shape and of very dense growth. A rare tree. Of value for cemeteries and for places of dignity. Specially suited to mild-wintered, semi-arid climates." (Meyer's introduction.)

Toona sinensis. (Meliaceae.) 38805. Seeds from Changli, Chihli, China. Collected by Mrs. Mary Clemens, from whom they were secured by Mr. Frank N. Meyer, Agricultural Explorer. "The well known Chinese cigar-box wood, *Cedrela sinensis*, of which the Chinese eat the young sprouts like spinach. The trees become quite old, grow to large size and withstand drought and alkali to a considerable extent. Recommended as a shade and avenue tree for the mild-wintered sections of the semi-arid belt in the United States. Chinese name 'Hsiang chun shu,' meaning 'sweet chun tree.'" (Meyer's introduction.)

Vitis tiliaefolia. (Vitaceae.) 38853. Cuttings from a wild grape from Herradura, Pinar del Rio, Cuba. "A vigorous, rapid-growing vine, occurring in the mountains of this province. These cuttings were obtained from a plant growing in the garden of Prof. F. S. Earle, who considers the species to be of great interest and value for use in developing a race of grapes which can be successfully grown in strictly tropical regions, and he recommends that careful attention be devoted to the hybridization of this species with some of the northern cultivated grapes. In Prof. Earle's garden the vine has completely covered a cashew tree 20 or 25 feet in height, and produces fruit very similar in appearance to the wild grape of the north. The bunches are 3 to 5 inches in length, loose, the berries deep purple in color and about three-eighths of an inch in diameter. They are used here for making jelly and grape juice." (Popenoe's introduction.)

NOTES FROM CORRESPONDENTS ABROAD.

Dr. George V. Perez writes from Santa Ursula, Tenerife. "In our beautiful climate trees will flower and fruit in

less than three years after planting. The frost and cold weather so prevalent in winter in such parts of the world as California, Florida, and the Mediterranean basin make us realise how superior our climate is to all the above mentioned, for here such a thing as a frost below 2000 feet above sea level is an unheard of thing, and yet in summer the maximum temperatures are much below that recorded in all the climates alluded to. No wonder these were called by the ancients the Fortunate Islands. I beg to inclose three small packets of Echium seeds, *E. pininana*, *E. wildpretii*, and *E. perezii* Sprague. The last is a new species which I had sent you about two years ago under the mistaken name of *E. pininana*, it is very like *E. wildpretii*. You ought to endeavor to raise plants of *E. pininana* which is a very rare plant indeed. All these plants are very remarkable, being most ornamental and attractive to bees and some of them as I have told you before are good forage. Since I speak of bees allow me to call your attention to our mountain broom, *Cytisus supranubius*, also called *Cytisus fragrans*, which is, as far as I know, the plant that gives the best honey in the world. Its habitat is the high plateau of Tenerife, surrounding the Peak, and it grows between 6000 and 10000 feet above the sea level in an excessively dry climate, with very cold nights and hot days. The winter temperature often falls at night to 10° Cent. below zero. I venture to suggest that this plant can be tried in many parts of California, where there are frosts. Oddly enough it has the same habitat as *Echium wildpretii*, which as I have told you before is the hardiest of our Echioms."

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